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United States Patent [19]

Marshall et al.

[11] Patent Number: 5,710,601
[45] Date of Patent: *Jan. 20, 1998

[54] VIDEO CLIP PROGRAM GUIDE

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[73] Assignee: Prevue Networks, Inc., Tulsa, Okla.

[*] Notice: The term of this patent shall not extend
beyond the expiration date of Pat. No. 5,

[21] Appl. No.: 599,141

[22] Filed: Feb. 9, 1996

Related U.S. Application Data

[63] Continuation of Ser. No. 246,949, May 20, 1994, Pat. No.
5,523,796.

[51] Int. Cl.⁶ H04N 5/445

[52] U.S. Cl. 348/564; 348/589; 348/906

[58] Field of Search 348/7, 564, 563,
348/589, 906, 12, 13, 6, 598, 584; H04N 7/10,
5/445

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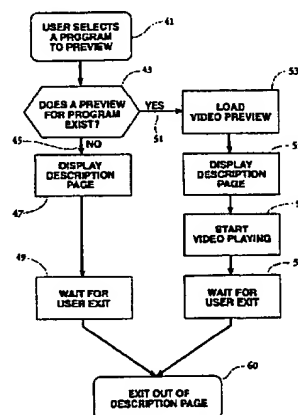
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[57] ABSTRACT

A system interactively controlled by a TV viewer remote control transmitter displays, on demand by the viewer and on the viewer's display screen, descriptive data and a video clip related to a program identified on the program guide. A tuner receives TV radio frequency or optical transmission signals in a plurality of cable channels and passes a viewer usable signal of any selected one of the channels to a signal combiner. A computer receives any of a plurality of control signals from the TV viewer remote control transmitter. It also controls the tuner to pass the viewer usable signal of any selected channel in response to one of the control signals from the TV viewer remote control transmitter. It also receives and stores an input picture image signal containing local program guide data and descriptive data and video clips related to selected ones of the programs identified in the program guide data. The computer also generates an output picture image signal consisting of at least a portion of the input picture image signal. The viewer, by use of the remote, controls the computer to select the content of the output picture image signal to include the descriptive data and video clip of a selected program. The signal combiner combines the viewer usable signal of any selected channel from the tuner with the output picture image signal from the computer to provide a display signal with the selected descriptive data and video clip superimposed over the channel programming display for input to the viewer's display screen.

22 Claims, 5 Drawing Sheets



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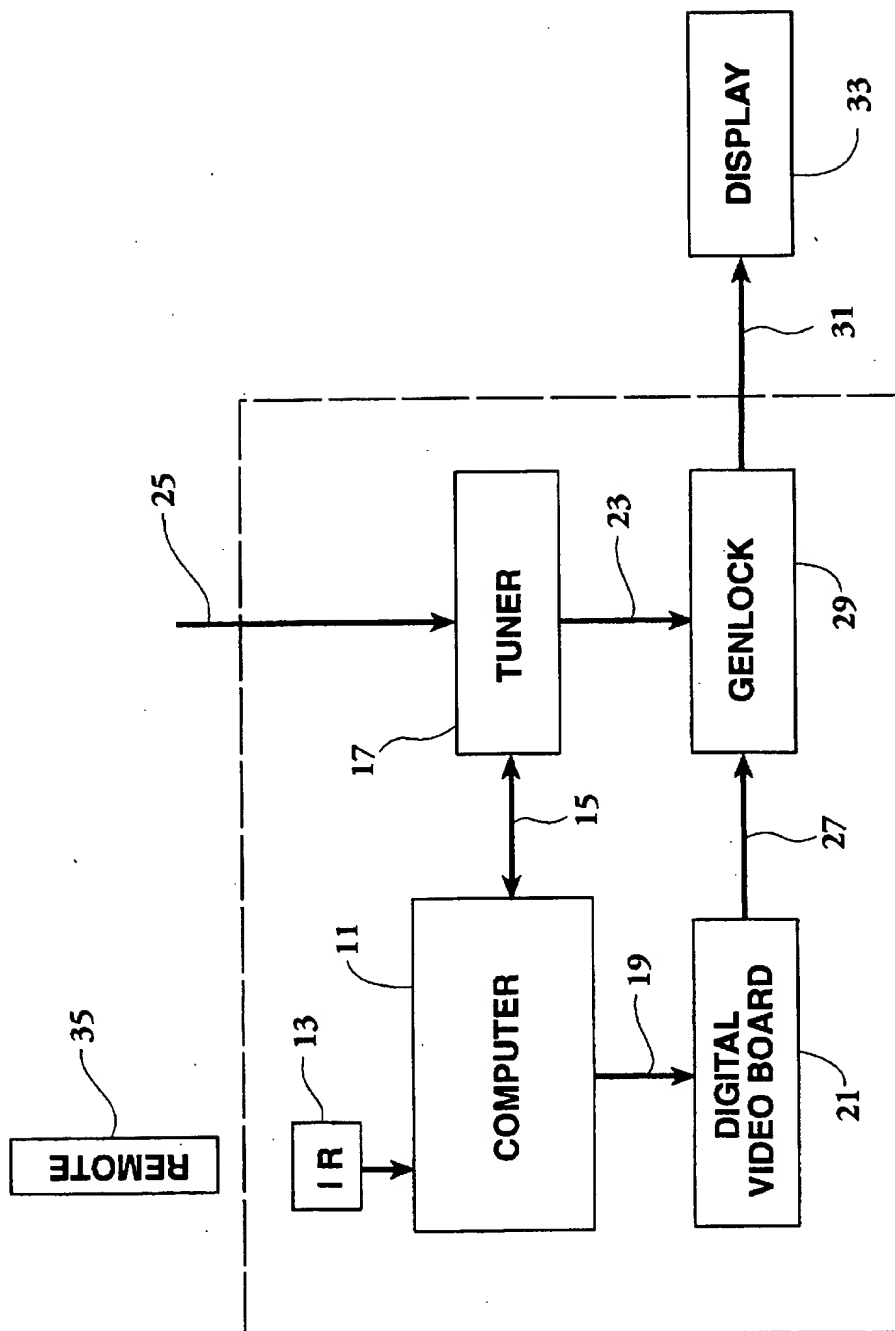
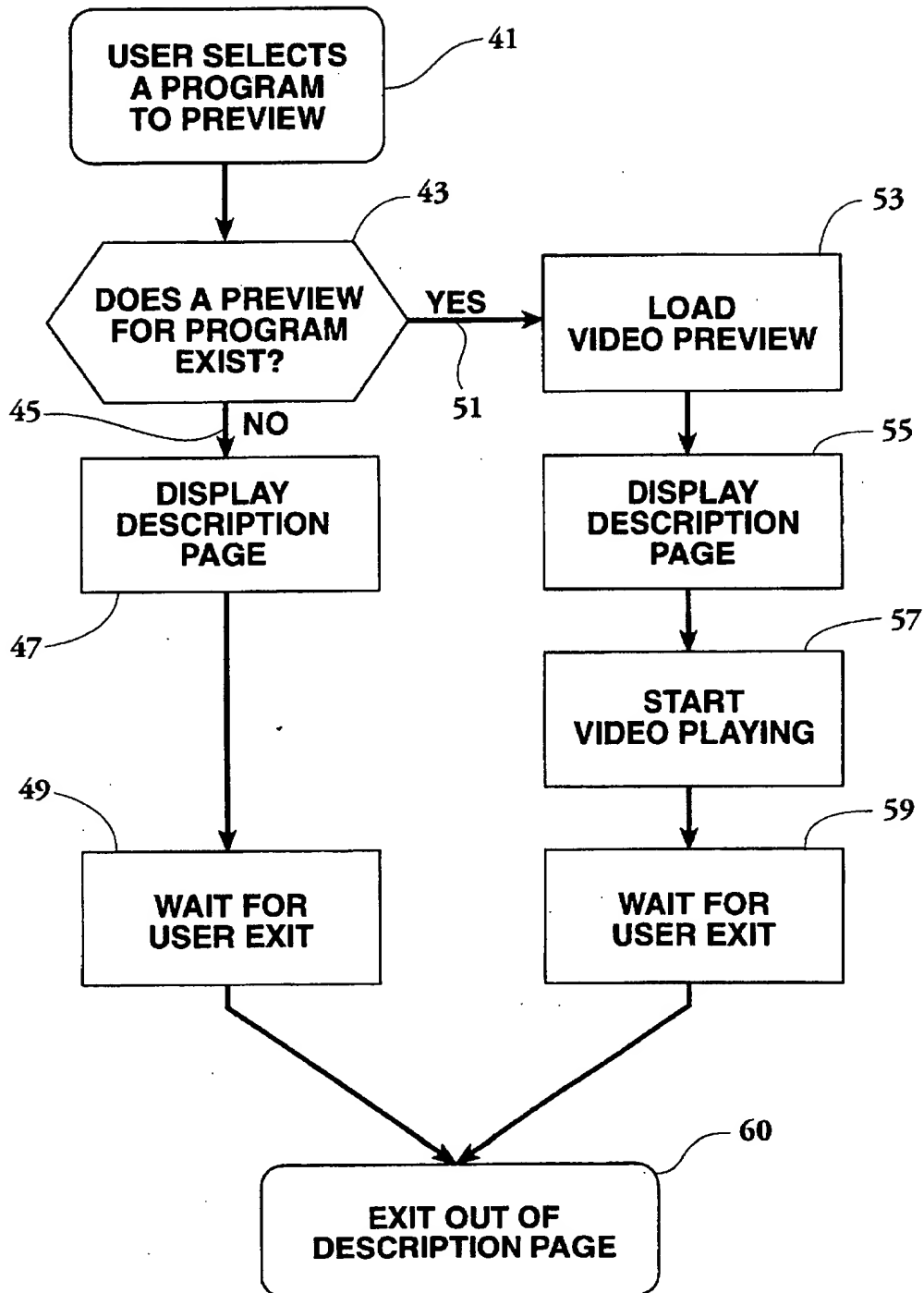
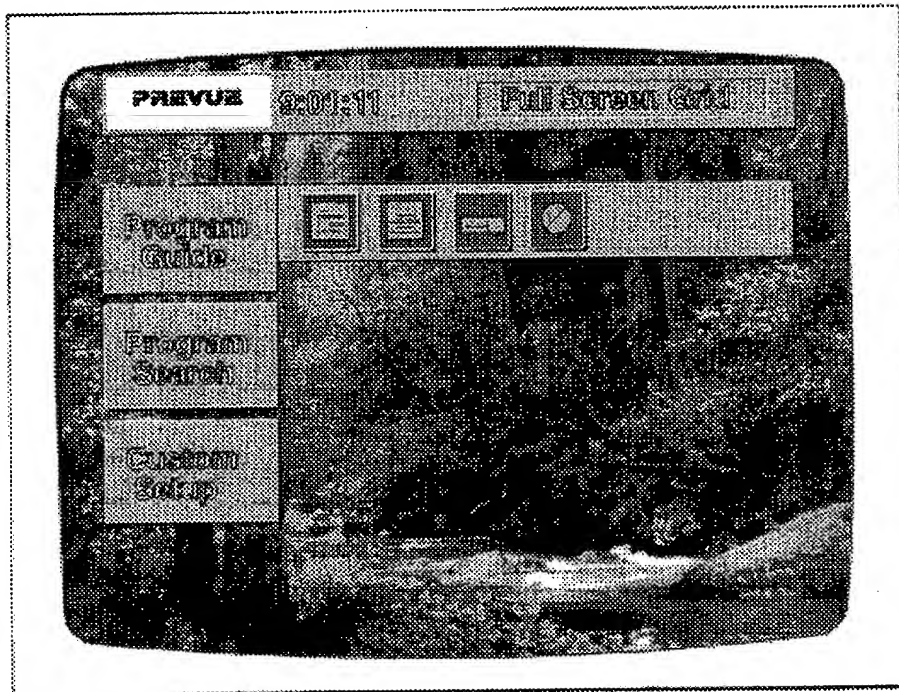


Fig. 1

*Fig. 2*

*Fig. 3*

PREVIEW 2:12:11 Select Day to View		
May 12	1:00 AM	2:30 AM
2 KAFH	Live -- Regis & Kathie Lee (CC)	
3	Smothers Brothers Comedy Hour (CC)	
4 DIS	Moose Tracks	Care Bears
5 KOKI	Paid Program (CC)	Paid Program (CC)
6 KOTV	« This Morning	
7 KWHB	Prayer (CC)	Victory (CC)

Fig. 4

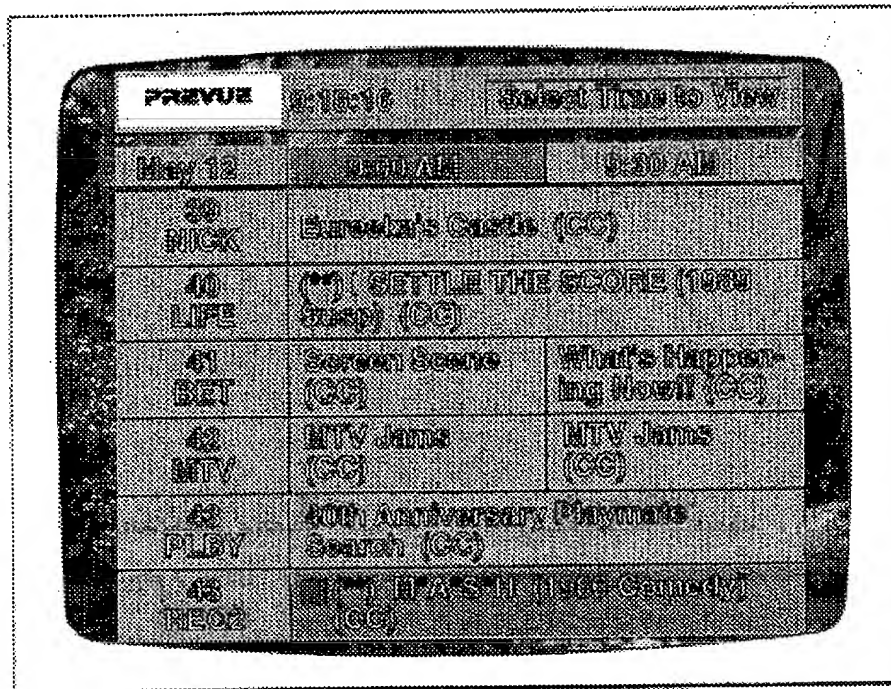


Fig. 5

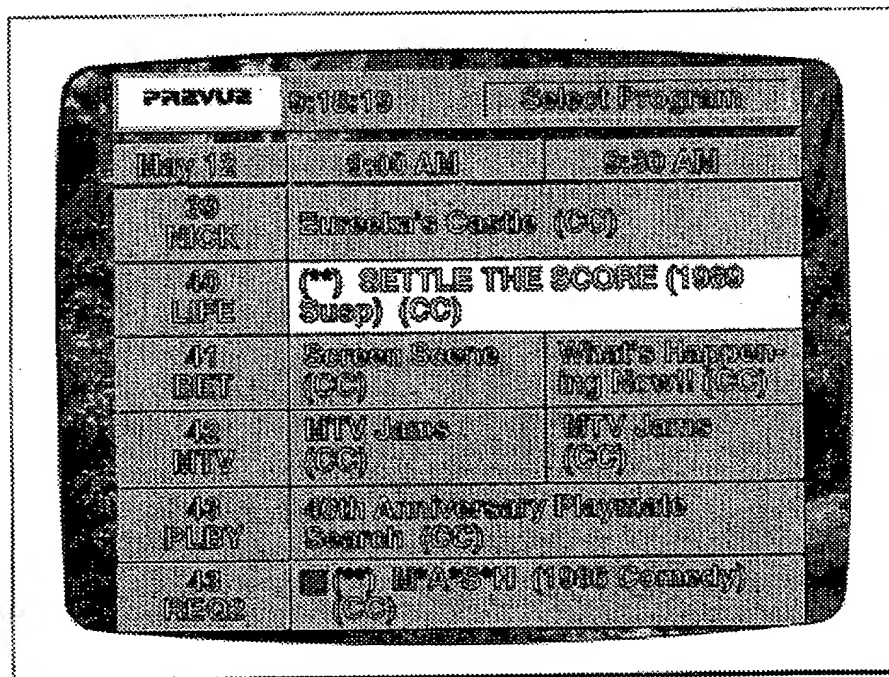
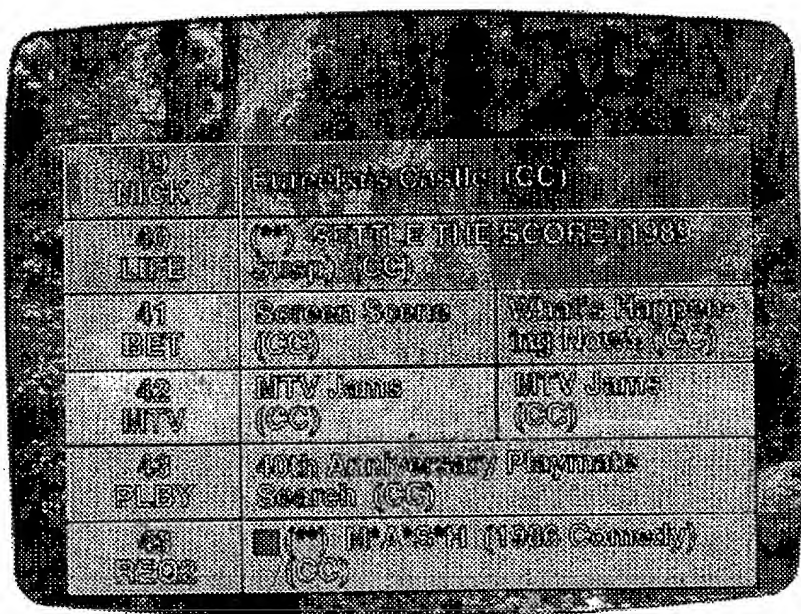


Fig. 6



39 NICK	Hudson's Bay (CC)	
40 LIFE	(**) GUTTER THE SCORE (1993) Jury (CC)	
41 BET	Screen Scene (CC)	What's Happen- ing Now (CC)
42 MTV	MTV Jams (CC)	MTV Jams (CC)
43 PLAY	40th Anniversary Playmate Search (CC)	
45 REQ2	(**) M*A*S*H (1982 Comedy) (CC)	

40

Fig. 7


PREVIEW **M*A*S*H**

Thu May 12, 1994
7:00 AM on REQ2
PG 01:00
Starring
Alan Alda
Gary Burghoff

Hotkeys and Fender cook up something
in the Mess Hall.

Air Times: REQ May 14, 1:00 PM
REQ May 15, 7:00 PM REQ May 16, 3:00 PM

Fig. 8

VIDEO CLIP PROGRAM GUIDE

This is a continuation of application Ser. No. 08/246,949, filed May 20, 1994, now U.S. Pat. No. 5,523,796.

BACKGROUND OF THE INVENTION

This invention relates generally to interactive video communications and more particularly concerns viewer controlled channel programming guide displays.

Programming guide information is presently displayed to the home TV viewer in non-interactive pages or scrolls of characters conveying programming guide information.

In present programming guide systems, video clip displays of selected program content are available only at the direction and control of the programming source and not the viewer. Unless a viewer happens to tune to the programming guide display at a time a video clip is being presented, no video clip information is available to the viewer.

It is, therefore, an object of this invention to provide a process and in-home video guide hardware by which a home viewer may interactively control a channel programming guide. Another object of this invention is to provide a process and in-home video guide hardware in which a home viewer may, at the viewer's demand, elect to view a video clip related to one or more programs identified on the channel programming guide. Another object of this invention is to provide a process and in-home video guide hardware which identifies those programs displayed on the channel programming guide for which video clips are available on request by the viewer.

SUMMARY OF THE INVENTION

In accordance with the invention, a system interactively controlled by a TV viewer remote control transmitter displays, on demand by the viewer and on the viewer's display screen, descriptive data and a video clip related to a program identified on the program guide. A tuner receives TV radio frequency or optical transmission signals in a plurality of cable channels and passes a viewer usable signal of any selected one of the channels to a signal combiner. A computer receives any of a plurality of control signals from the TV viewer remote control transmitter. It also controls the tuner to pass the viewer usable signal of any selected channel in response to one of the control signals from the TV viewer remote control transmitter. It also receives and stores an input picture image signal containing local program guide data and descriptive data and video clips related to selected ones of the programs identified in the program guide data. The computer also generates an output picture image signal consisting of at least a portion of the input picture image signal. The viewer, by use of the remote, controls the computer to select the content of the output picture image signal to include the descriptive data and video clip of a selected program. The signal combiner combines the viewer usable signal of any selected channel from the tuner with the output picture image signal from the computer to provide a display signal with the selected descriptive data and video clip superimposed over the channel programming display for input to the viewer's display screen.

BRIEF DESCRIPTION OF THE DRAWINGS

Other objects and advantages of the invention will become apparent upon reading the following detailed description and upon reference to the drawings in which:

FIG. 1 is a block diagram illustrating a preferred embodiment of the hardware of the interactive program guide with descriptive data and video clip capability;

FIG. 2 is a flow chart illustrating the basic process and options of the descriptive and video clip capability of the interactive program guide;

FIG. 3 is a representation of an interactive program guide main menu display permitting access to program guide data;

FIG. 4 is a representation of the interactive program guide data display in a mode in which the viewer may select the date of programming desired;

FIG. 5 is a representation of the interactive program guide data display in a mode in which the viewer may select the time of programming desired;

FIG. 6 is a representation of the interactive program guide data display in a mode in which the viewer may select the program desired;

FIG. 7 is a representation of the interactive program guide data display in which the viewer has selected a program for which a video clip as well as descriptive data is available; and

FIG. 8 is a representation of the interactive program guide data display in which the description data and video clip are displayed.

While the invention will be described in connection with a preferred embodiment and process, it will be understood that it is not intended to limit the invention to that embodiment or process. On the contrary, it is intended to cover all alternatives, modifications and equivalents as may be included within the spirit and scope of the invention as defined by the appended claims.

DETAILED DESCRIPTION OF THE INVENTION

Turning first to FIG. 1, the components of the interactive program guide are illustrated. A computer 11 having a command information receiver, preferably an infrared or radio frequency receiver 13, provides a control signal 15 to a tuner 17 and a picture image signal 19 to a digital video board 21. The tuner 17 converts or demodulates radio frequencies or optical transmissions to a signal usable by the viewer to output a signal 23 selected from a plurality of signals 25 input to the tuner 17 from the cable source (not shown), typically frequency division multiplexed video, audio and data signals transmitted via a coaxial cable, over-the-air radio frequencies or fiber optics. The digital video board 21 converts digital data into a video signal. The tuner output or base programming signal 23 has superimposed thereon an information picture image signal 27 from the digital video board 21 in a genlock signal combiner or overlay 29 to produce a video display signal 31 to the viewer's display screen 23 of the viewer's television. The information picture image signal 27 includes written description or written description and video clip segments providing a brief description and preview of one or more selected programs included in the video guide programming schedule. In each video clip segment, scenes from the selected program are provided to give the viewer an idea of the program content. An icon is displayed with the title of those programs on the programming schedule for which both descriptive information and a video clip are available. If a video clip is selected, the description and the clip will continue. The viewer sends commands to the receiver 13 to control the operation of the computer 11 and select the video clip to be displayed by the use of a remote control transmitter, preferably an infrared or radio frequency transmitter 35. The computer 11 is based on microprocessor and may utilize random access (RAM) and/or read only (ROM) memory. The software necessary to operate the micropro-

cessor may be embedded in the device or downloaded via the cable system to the device.

The above described interactive program guide components operate in response to the control of the computer 11. While the home viewer is watching programming presented on his display 33 in response to the tuner 17 feeding any basic program signal 23 from the input selections 25 to the genlock combiner 29, the viewer may opt to simultaneously view the programming guide information available to the combiner 29 from the computer 11 through the digital video board 21. The viewer simply presses a predetermined key on the remote 35 to select the "Program Guide" display. As shown in FIG. 3, the "Program Guide" nomenclature will appear on the screen with other main menu information such as "Program Search" or "Custom Setup", as shown on the screen. Preferably, and as shown, the menu automatically defaults to the "Program Guide" selection. At this juncture, the viewer presses a predetermined key on the remote 35, such as the highlight button, to enter the "Program Guide" program as is illustrated in the display of FIG. 4. Preferably by use of up or down arrows, the viewer then selects the date for which programming is desired. As shown, the user has selected May 12 as the date of programming.

Turning to FIG. 5, the viewer next selects the time slot of programming desired, preferably by using the right arrow to sequence through the times available. The time selected will be highlighted and, as shown in FIG. 5, the viewer has selected the 9:00 am time slot. By pressing another predetermined key on the remote 35, such as the highlight button, the user can now highlight or identify the program at which the guide is presently set, as shown in FIG. 6. Then, by use of predetermined keys on the remote 35, preferably the up or down arrows, the viewer can move the highlight cursor to select a program containing an icon which indicates that a video clip is available with respect to that particular program. The highlight was originally set at the program "Settle the Score" as shown in FIG. 6. In FIG. 7, the user has shifted the highlight down to the program M*A*S*H which includes an icon 40 indicating that a video clip is available. The viewer then presses a predetermined key on the remote 35, such as the highlight button, to cause the written description and video clip related to the selected program to be displayed on the video screen 33. This is illustrated in FIG. 8.

In accomplishing this display, as shown in FIG. 2, when the viewer has selected the program to preview 41, the video clip routine of the computer 11 inquires "does a preview for program exist" 43. If the answer to this inquiry is "NO" 45, the routine proceeds through a "display description page" 47 in which only the written description available with respect to the program is displayed. As shown, this display will continue through a "wait for user exit" period 49 until the viewer leaves this mode by pressing a predetermined key on the remote 35 such as the exit key to "exit out description page" 60. If the response to the inquiry, "does a preview for program exist" 43 is "YES" 51, the computer 11, will then "load video preview" 53 through the digital video board 21 to the genlock 29 for combination with the signal 23 from the tuner 17. The viewer's video display 33 will then, in the "display description page" step 55 and the "start video playing step" 57, cause the video clip to be played in a continuous loop in simultaneous display with the written description. This display will continue through "wait for user exit" period 59 thus continuing the display until the viewer leaves this mode by pressing a predetermined key on the remote 35, such as the exit key to "exit out of description page" 60.

Thus, it is apparent that there has been provided, in accordance with the invention, a video clip program guide that fully satisfies the objects, aims and advantages set forth above. While the invention has been described in conjunction with specific embodiments thereof, it is evident that many alternatives, modifications and variations will be apparent to those skilled in the art and in light of the foregoing description. Accordingly, it is intended to embrace all such alternatives, modifications and variations as fall within the spirit of the appended claims.

What is claimed is:

1. A system for displaying a video clip for a television program immediately upon viewer selection of the television program from a television program guide displayed on a display screen, comprising:

means for displaying the television program guide on the display screen;

means for allowing a viewer to select a television program from the television program guide; and

means for immediately displaying a video clip for the selected television program on the display screen upon selection of the television program from the television program guide.

2. The system of claim 1 further comprising means for indicating which of the television programs have corresponding video clips.

3. The system of claim 2 wherein the means for indicating which of the television programs have corresponding video clips comprises means for displaying an icon adjacent to the television programs in the television program guide for which video clips exist.

4. The system of claim 1 further comprising means for displaying written descriptions for the television programs in the television program guide.

5. The system of claim 4 further comprising means for simultaneously displaying the written descriptions and the video clips.

6. The system of claim 4 further comprising means for displaying one of the written descriptions when it is determined that no video clip exists for the selected television program.

7. The system of claim 1 further comprising means for displaying one of the video clips in a continuous loop.

8. The system of claim 1 further comprising means for sequencing through time slots in the television program guide.

9. A method for displaying a video clip for a television program immediately upon viewer selection of the television program from a television program guide displayed on a display screen, comprising the steps of:

displaying the television program guide on the display screen;

allowing a viewer to select a television program from the television program guide; and

immediately displaying a video clip for the selected television program on the display screen upon selection of the television program from the television program guide.

10. The method of claim 11 further comprising the step of indicating which of the television programs have corresponding video clips.

11. The method of claim 10 wherein the step of indicating which television programs have corresponding video clips comprises the step of displaying an icon adjacent to the television programs in the television program guide for which video clips exist.

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12. The method of claim 9 further comprising the step of displaying written descriptions for the television programs in the television program guide.

13. The method of claim 12 wherein the step of displaying written descriptions further comprises the step of simultaneously displaying the written descriptions and the video clips. 5

14. The method of claim 12 further comprising the step of displaying one of the written descriptions when it is determined that no video clip exists for the selected television program. 10

15. The method of claim 9 further comprising the step of displaying one of the video clips in a continuous loop.

16. The method of claim 9 further comprising the step of sequencing through time slots in the television program guide. 15

17. A system for displaying a video clip for a television program selected by a viewer from a television program guide on a display screen on top of a selected television channel, comprising:

means for displaying the selected television channel on the display screen; and

means for superimposing the video clip for the television program selected by the viewer on top of the selected television channel, so that the video clip and a portion of the selected television channel are displayed simultaneously. 25

18. A method for displaying a video clip for a television program selected by a viewer from a television program guide on a display screen on top of a selected television channel, comprising the steps of: 30

displaying the selected television channel on the display screen; and

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superimposing the video clip for the television program selected by the viewer on top of the selected television channel, so that the video clip and a portion of the selected television channel are displayed simultaneously.

19. A system for indicating which of the television programs listed in a television program guide on a display screen have corresponding video clips that may be selected and displayed on the display screen, comprising:

means for displaying the television program guide on the display screen; and

means for indicating on the display screen which television programs listed in the television program guide have corresponding video clips.

20. The system of claim 19 wherein the means for indicating comprises means for displaying an icon adjacent to the television programs in the television program guide for which video clips exist.

21. A method for indicating which of the television programs listed in a television program guide on a display screen have corresponding video clips that may be selected and displayed on the display screen, comprising the steps of:

displaying the television program guide on the display screen; and

indicating on the display screen which television programs listed in the television program guide have corresponding video clips. 25

22. The method of claim 21 wherein the step of indicating comprises the step of displaying an icon adjacent to the television programs in the television program guide for which video clips exist. 30

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 5,710,601
DATED : January 20, 1998
INVENTOR(S) : Connie T. Marshall et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 1, line 58, "programing" should be --programming--.

Column 4, line 60, Claim 10, "claim 11" should be --claim 9--.

Signed and Sealed this
Twenty-sixth Day of September, 2000

Attest:



Q. TODD DICKINSON

Attesting Officer

Director of Patents and Trademarks

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO : 5,710,601
DATED : January 20, 1998
INVENTION(S) : VIDEO CLIP PROGRAM GUIDE

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On the title page, Item [56]

change "Victor A. Kostak" to
--Victor R. Kostak--;

On page 2, in OTHER PUBLICATIONS for the reference by
"Matthew D. Miller,"

change "1990's" to --1990's"--; and
change "IEEE," to --IEEE,--;

Column 1, line 9, change "programing" to --programming--;

Column 1, line 58, change "programing" to --programming--; and

Column 4, line 60, change "11" to --9--.

Signed and Sealed this

Second Day of January, 2001

Attest:



Q. TODD DICKINSON

Attesting Officer

Commissioner of Patents and Trademarks